Rec'd PCT/PTO 30 SEP 2004 9 0	11509826	receiving Office use only			
\mathbf{CT}		converged that are startly			
•	International Applicatio	n No.			
REQUEST	International Filing Dat	е			
The second accurate that the appropri					
The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.	Name of receiving Office	Name of receiving Office and "PCT International Application"			
	Applicant's or agent's file reference (if desired) (12 characters maximum) 43279.52.0				
Box No. I TITLE OF INVENTION					
VENOUS BI-VALVE	7.1				
Box No. II APPLICANT This person	on is also inventor				
Name and address: (Family name followed by given name; for a legal en The address must include postal code and name of country. The country of Box is the applicant's State (that is, country) of residence if no State of reside	the agaress indicated in this	Telephone No. 011 55 11 3812 4561			
	·	Facsimile No.			
OSSE, Francisco J.		011 55 11 3034 4646			
Rua Lomas Valentinas, 278 Alto da Lapa		Teleprinter No.			
Sao Pauló - SP BRAZIL 05084-010		Applicant's registration No. with the Office			
State (that is, country) of nationality:	State (that is, country)	of residence:			
i in person is approximately	BR ted States except	the United States of America only the Supplemental Box			
for the purposes of:	States of America	of America only			
Box No. III FURTHER APPLICANT(S) AND/OR (FUR		T			
Name and address: (Family name followed by given name; for a legal e The address must include postal code and name of country. The country o Box is the applicant's State (that is, country) of residence if no State of reside	t the address maicatea in this	This person is:			
THORPE, Patricia E.		x applicant and inventor			
Five Woodland Heights	inventor only (If this check-box				
lowa City, Iowa 52240		is marked, do not fill in below.)			
US		Applicant's registration No. with the Office			
State (that is, country) of nationality: US	State (that is, country,) of residence:			
This person is applicant all designated all designated	ated States except I States of America	the United States of America only the States indicated in the Supplemental Box			
Further applicants and/or (further) inventors are indicated	d on a continuation sheet.				
Box No. IV AGENT OR COMMON REPRESENTATIVE		R CORRESPONDENCE			
The person identified below is hereby/has been appointed to acoust the applicant(s) before the competent International Authorities.	et on behalf ies as:	agent common representative			
Name and address: (Family name followed by given name; for a legal e The address must include postal code and name o	entity, full official designation. f country.)	Telephone No. (612) 492-7172			
KEOUGH, Steven J. FREDRIKSON & BYRON, P.A.	Facsimile No. (612) 492-7077				
4000 Pillsbury Center		Teleprinter No.			
200 South Sixth Street	•	•			
Minneapolis, Minnesota 55402 US		Agent's registration No. with the Office 33,190			
Address for correspondence: Mark this check-hox who	ere no agent or common re	presentative is/has been appointed and the			
space above is used instead to indicate a special address	to which correspondence	should be sent.			

Form PCT/RO/101 (first sheet) (March 2001; reprint January 2003)

Во	x No.	V DESIGNA OF STATES	3	Mark the applicable check-boxes belo	a.	st one must be marked.
The following designations are hereby made under Rule 4.9(a):						
		al Patent				
	_		M Ga	ambia, KE Kenya, LS Lesotho, MW	Mala	wi, MZ Mozambique, SD Sudan.
		SL Sierra Leone, SZ Swaziland, T2	Uni	ted Republic of Tanzania, UG Uganda, 2	ZM Za	mbia, ZW Zimbabwe, and any other
				e Harare Protocol and of the PCT (if of		
-		• • •				
X	EA			erbaijan, BY Belarus, KG Kyrgyzstan, I		
		Patent Convention and of the PCT	tan, 1	TM Turkmenistan, and any other State w	nich is	a Contracting State of the Eurasian
X	EP		Relo	gium, BG Bulgaria, CH & LI Switzerland	d and I	iechtenstein CY Cynrus, CZ Czech
		Republic, DE Germany, DK Denm	ark,	EE Estonia, ES Spain, FI Finland, FR	France	, GB United Kingdom, GR Greece,
		IE Ireland, IT Italy, LU Luxembou	ırg, M	AC Monaco, NL Netherlands, PT Portug	gal, SE	Sweden, SI Slovenia, SK Slovakia,
				s a Contracting State of the European Pa		
X	OA	OAPI Patent: BF Burkina Faso, l	BJ Be	enin, CF Central African Republic, CG	Congo	o, CI Côte d'Ivoire, CM Cameroon,
		TD Chad TG Togo, and any other	torial State	I Guinea, GW Guinea-Bissau, ML Males which is a member State of OAPI and a	Contr	acting State of the PCT (if other kind
		of protection or treatment desired. s	pecifi	y on dotted line)		
				reatment desired, specify on dotted line):	621 NO	Z New Zealand
_		United Arab Emirates		GM Gambia HR Croatia		
				HU Hungary		
		Armenia	-			Poland
				IL Israel		
				N India		
X	AZ .	Azerbaijan	X I	IS Iceland	🗷 RU	U Russian Federation
				JP Japan		
		Barbados		KE Kenya		
				KG Kyrgyzstan		
_				KP Democratic People's Republic of Korea	7. 2	Sweden Singapore
		Belarus		KR Republic of Korea		
		Canada	DO I	KZ Kazakhstan	IX SI	Sierra Leone
	-	& LI Switzerland and Liechtenstein				Tajikistan
X	CN	China	X I	LK Sri Lanka	TI TI	M Turkmenistan
X	СО	Colombia	XI	LR Liberia	Tr X	N Tunisia
				LS Lesotho		R Turkey
		Cuba			IXI TI	Trinidad and Tobago
		Czech Republic			Mar and	Third Double of Toppole
		Germany		MA Morocco		United Republic of Tanzania Ukraine
X	DM:	Dominica	DX N	MD Republic of Moldova		
_		Algeria				
		Ecuador		MG Madagascar		
X	EE I	Estonia	X N	MK The former Yugoslav Republic of	X UZ	Z Uzbekistan
		Spain		Macedonia		
		Finland				Viet Nam
		United Kingdom		MWMalawi		
	GD (Grenada		MX Mexico		A South Africa
	CH (Ghana	1221 V	VIZ Mozambique		W Zimbia W Zimbabwe
				•		
				s which have become party to the PCT a		
			월.		<u> </u>	
Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the						
applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)						

Form PCT/RO/101 (second sheet) (January 2003)

upplemental Box is not used, this sheet should not be inc

the request.

- If, in any of the Boxes, except Boxes Nos. VIII(i) to (v) for which Continuation of Box No. IV: a special continuation box is provided, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No...." (indicate the number of the Box) and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in
 - if more than two persons are to be indicated as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box' is the applicant's State (that is, country) of residence if no State of residence is indicated below;
- if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant:
- (iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;
- if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;
- if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition," or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part": in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;
- if, in Box No. VI, there are more than five earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI.
- If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement: in such case, write "Designation(s) excluded from precautionary designation statement" and indicate the name or two-letter code of each State so excluded.

BAUMAN, Mary P., Reg. No. 31,926; DOLAN, John F., Reg. No. 45,382; GOLDMAN, Philip M., Reg. No. 31,162 GROENKE, Allen W., Reg. No. 42,608; HALLER, James R., Reg. No. 24,906; KADIEVITCH, Natalie D., Reg. No. 34,196; KEOUGH, Steven J., Reg. No. 33,190; KOHLS, Philip R., Reg. No. 51,891; McMASTERS, Thomas L. Reg. No. 45,593; MILLS, Alicia Griffin, Reg. No. 46,933; NEBLETT, Adonis A., Reg. No. 32,358; PAIGE, James J., Reg. No. 50,886; PARZYCH, John S., Reg. No. 52,097; PISKOLICH, Frank P., Reg. No. 52,123; RUSSELL, Raymond K., Reg. No. 52,185; SEGELBAUM, Charles D., Reg. No. 42,138; SMITH, Kara K., Reg. No. 49,079; SNUSTAD, Eric J., Reg. No. 45,120; TAYLOR, Craig F., Reg. No. 40,199; WEST, David C., Reg. No. 35,735

all of:

FREDRIKSON & BYRON, P.A. 4000 Pillsbury Center 200 South Sixth Street Minneapolis, Minnesota 55402-1425

	3	sneet No,T		·····		
Box No. VI PRIORITE AIM						
The priority of the following earlier application(s) is hereby claimed:						
Filing date	Number	Where earlier application is:				
of earlier application(day/month/year)	of earlier application	national application: —country-or-Member— of WTO	regional application:* regional Office	international application: receiving Office		
item (1) (20.02.2002) 20 February 2002	60/359,021	US				
item (2)						
item (3)						
item (4)						
item (5)						
Further priority claims a	are indicated in the Suppleme	ental Box.				
The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:						
* Where the earlier application	on is an ARIPO application, is	indicate at least one country	party to the Paris Conve	Supplemental Box		
Industrial Property or one Me	ember of the World Trade O	rganization for which that e	earlier application was fi	led (Rule 4.10(b)(ii)):		
Box No. VII INTERNAT	IONAL SEARCHING AU	THORITY				
Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used): ISA / US						
Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the						
International Searching Authority): Date (day/month/year) Number Country (or regional Office)						
Box No. VIII DECLARATIONS						
The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable Number of check-boxes below and indicate in the right column the number of each type of declaration): declarations						
Box No. VIII (i) Declaration as to the identity of the inventor :						
Box No. VIII (ii) Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent :						
Box No. VIII (iii) Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application :						
Box No. VIII (iv) Declaration of inventorship (only for the purposes of the designation of the United States of America):						
Box No. VIII (v) Declaration as to non-prejudicial disclosures or exceptions to lack of novelty:						

Form PCT/RO/101 (third sheet) (July 2002; reprint January 2003)

~ .			5		
Sheet	No.		7		

Box No. IX CHECK I ANGUAGE OF FILING						
This international application contains: (a) in paper form, the following number of sheets:	This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):	Number of items				
request (including	1. K fee calculation sheet	:				
declaration sheets) : 5	2. original separate power of attorney	;				
description (excluding sequence listings and/or	3. original general power of attorney	:				
tables related thereto) : 11	4. copy of general power of attorney; reference number, if any:					
claims : 4	5. ☐ statement explaining lack of signature					
abstract : 1 drawings : 8	6. priority document(s) identified in Box No. VI as	·				
drawings : 8 Sub-total number of sheets : 29	item(s):	:				
sequence listings :	7. translation of international application into (language):	:				
tables related thereto : 0 (for both, actual number of	8. separate indications concerning deposited microorganism or other biological material	,				
sheets if filed in paper form, whether or not also filed in	9. sequence listings in computer readable form (indicate type and number of carriers)	•				
computer readable form; see (c) below) ——————	(i) copy submitted for the purposes of international search un Rule 13 <i>ter</i> only (and not as part of the international applic	der				
Total number of sheets : 29	(ii) (only where check-box (b)(i) or (c)(i) is marked in left column	2)				
(b) only in computer readable form	additional copies including, where applicable, the copy fo purposes of international search under Rule 13 <i>ter</i>	rune :				
(i) sequence listings	(iii) together with relevant statement as to the identity of the cocopies with the sequence listings mentioned in left column	opy or 1 :				
(ii) ☐ tables related thereto (c) ☐ also in computer readable form	10. tables in computer readable form related to sequence listings (indicate type and number of carriers)					
(Section 80 I(a)(ii)) (i) ☐ sequence listings	(i) ☐ copy submitted for the purposes of international search un Section 802(b-quater) only (and not as part of the internat	ider				
(ii) tables related thereto	application)	:				
Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the	(ii) (iii) (iii) (iii) (iv) (iii) (iv) (iii) (iv) (iv	nn) r the ter) :				
sequence listings:	(iii) together with relevant statement as to the identity of the cocopies with the tables mentioned in left column	opy or .				
tables related thereto:	other (specify): Transmittal Letter; Return Postcard	: 2				
(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)						
Figure of the drawings which should accompany the abstract: 12 Language of filing of the international application: English						
Box No. X SIGNATURE OF APPLICAN' Next to each signature, indicate the name of the person sig	I, AGENT OR COMMON REPRESENTATIVE ning and the capacity in which the person signs (if such capacity is not obvious from rec	ading the request).				
Dated: 20 February 2003						
011						
Therender	uch					
Steven J. KEOUGH						
Stoven J. REGOGIT	//					
For receiving Office use only						
Date of actual receipt of the purported	·	Orawings:				
international application:						
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:						
4. Date of timely receipt of the required corrections under PCT Article 11(2):						
5. International Searching Authority (if two or more are competent): ISA / 6. Transmittal of search copy delayed until search fee is paid						
	For International Bureau use only					
Date of receipt of the record copy by the International Bureau:						

Form PCT/RO/101 (last sheet) (January 2003)

This shall be part of and does not co	For receiving Office use only
	Tof receiving Office age only
FEE CALCULATION SHEET Annex to the Request	International Application No.
Applicant's or agent's file reference 43279.52.0	Date stamp of the receiving Office
Applicant	
OSSE, Francisco J., et al.	
CALCULATION OF PRESCRIBED FEES	
1. TRANSMITTAL FEE	240.00 T 700.00 S
SEARCH FEE International search to be carried out by US (If two or more International Searching Authorities are competent to ca	
search, indicate the name of the Authority which is chosen to carry out	the international search.)
3. INTERNATIONAL FEE	
Basic Fee Where items (b) and/or (c) of Box No. IX apply, enter Sub-tota Where items (b) and (c) of Box No. IX do not apply, enter Tota	al number of sheets } 29
b1 first 30 sheets	407.00 b1
_	-0- b2
number of sheets fee per sheet in excess of 30	
b3 additional component (only if sequence listings and/or tal thereto are filed in computer readable form under Section or both in that form and on paper, under Section 801(a)(i	bles related 801(a)(i), i)):
	· • • • • • • • • • • • • • • • • • • •
400 x = fee per sheet	1 407.00 [7]
Add amounts entered at b1, b2 and b3 and enter total at $B\ .\ .$	407.00 B
Designation Fees The international application contains ALL designations.	
5 00 00	= 440.00 D
number of designation fees amount of designation fee payable (maximum 5)	
Add amounts entered at B and D and enter total at I	847.00 🔟
(Applicants from certain States are entitled to a reduction of international fee. Where the applicant is (or all applicants are) so en to be entered at I is 25% of the sum of the amounts entered at B a	f 75% of the titled, the total
to be entered at I is 25% of the sum of the amounts entered at B a. 4. FEE FOR PRIORITY DOCUMENT (if applicable)	nd D.) 15.00 P
in 122 to a transfer of the production of the transfer of the	1000.00
5. TOTAL FEES PAYABLE	1802.00 TOTAL
Add amounts entered at T, S, I and P, and enter total in the TOT	AL box
The designation fees are not paid at this time.	
MODE OF PAYMENT	
authorization to charge postal money order deposit account (see below)	cash coupons
cheque bank draft	revenue stamps other (specify):
AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT A (This mode of payment may not be available at all receiving Offices)	Receiving Office: RO/_US
Authorization to charge the total fees indicated above.	Deposit Account No.: 06-1910
(This check-box may be marked only if the conditions for deposit a	Date: 20 February 2003
of the receiving Office so permit) Authorization to charge any del or credit any overpayment in the total fees indicated above.	
Authorization to charge the fee for priority document.	Signature:
Form PCT/RO/101 (Appex) (January 2003)	See Notes to the fee Ediculation sheet